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DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D.C. 20310

DAAG-PAP (M) (16 Sep 71) DAFD-OTT

1 October 1971

AD 888498

SUBJECT: Operational Reports - Lessons Learned, Engineer Units - 169th Bn, 34th Bn, 864th Bn, 31st Bn, 45th Gp, and 339th Bn - for Period Ending 30 April 1971

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1. Section 2 of reports, subject as above, are forwarded for review and evaluation in accordance with para 4b, AR 525-15.
2. The information contained in these reports is provided to insure that lessons learned during current operations are used to the benefit of future operations and may be adapted for use in developing training material.
3. Information of actions initiated as a result of your evaluation should be forwarded to the Assistant Chief of Staff for Force Development, ATTN: DAFD-OTT, within 90 days of receipt of this letter.
4. As Section 1 of the report is not pertinent to the Lessons Learned program it has been omitted.

BY ORDER OF THE SECRETARY OF THE ARMY.

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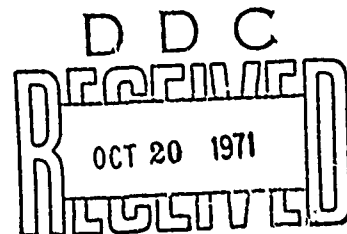
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*Verne L. Bowers*  
VERNE L. BOWERS  
Major General, USA  
The Adjutant General



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20 May 1971

SUBJECT: Operational Report--Lessons Learned, 31st Engineer Battalion (C)(A)  
Period Ending 30 April 1971, RCS OSFOR (R3)SECTION II. LESSONS LEARNED

- a. PERSONNEL: None
- b. INTELLIGENCE: None
- c. OPERATIONS:

(1) Centralization of 10 ton tractors and 25 ton semitrailers in Headquarters Company.

(a) Observation: The deadline rate of 10 ton tractors was unacceptably high when the tractors were attached to the line companies as per TO&E. In addition, unit deployment into isolated locations meant that the tractors were unavailable for supporting other projects.

(b) Evaluation: The 10 ton tractors were centralized into the heavy equipment section of the Headquarters Company. The maintenance capability of the headquarters maintenance section reduced the deadline rate significantly. In addition, the centralized pool of haul assets reduced the idle time of the tractors. Movement of supplies and equipment to the forward companies was greatly facilitated. When a 10 ton tractor and semitrailer are needed at a forward work site on a permanent basis one is put there TDY for several weeks then rotated with another one and returned to Battalion Headquarters for a maintenance stand-down. During the six month period that the 10 ton tractors and semitrailers have been centralized, organic haul capability has increased significantly.

(c) Recommendation: That Battalions that are widely dispersed and require heavy haul assets continually consider centralizing the 10 ton tractors and 25 ton semitrailers in a central pool. This is not recommended as a TO&E change due to the Battalion's unique situation.

(d) Command Action: This realignment of assets has been implemented by this headquarters.

(2) Placement of M8A1 matting on Airfields.

(a) Observation: Matting has been placed on tactical airfields in MR3 for the first 500 ft(touchdown areas) on both ends of the runway. The standard method of construction has been to start at the end of the runway laying the matting and work to the 500 foot mark. This results in the aircraft landing into the side connectors on the M8A1.

(b) Evaluation: This Battalion has maintenance responsibility on four runways that have matting on the touchdown areas. In every case, the

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20 May 1971

SUBJ.

Operational Report--Lessons Learned, 31st Engineer Battalion (C) (A)  
Period Ending 30 April 1971, RGS OSFOR (R3)

principle failures have been the side connectors on the matting being torn up by the impact of airplane landings. It appears that this problem can be alleviated by starting the matting for the touchdown area at the inside edge and working to the edge of the runway. There are no runways in the Battalion's AO that has matting installed that way so this unit has no field experience with airfields that have aircraft landing with the side connectors instead of against them. TM 5-337 para 25. f. indicates the matting can be laid either way.

(c) Recommendation: That a study can be conducted on the problem of aircraft impact tearing the side connectors on NSA1 to determine if there is a desired direction of installation.

(d) Command Action: Recommended Study.

(d) ORGANIZATION: NONE

(e) TRAINING: NONE

(f) LOGISTICS: NONE

(g) COMMUNICATIONS: NONE

(h) MATERIAL: NONE

(i) OTHER: NONE

~~1 Incl~~

~~Photo Pack (5) photos~~

Inclosure 1 withdrawn, HQ, DA

*James J. Anderson*  
JAMES J. ANDERSON  
LTC, CE  
Commanding

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75P-OP (20 May 71) 1st Ind  
 Operational Report--Lessons Learned, 31st Engineer Battalion  
 (C)(A), Period Ending 30 April 1971, RCS 33FOR-65(R3)

DA, HQ, 159th Engineer Group, APO 96491

29 May 1971

THRU: Commanding General, USAMCV, ATTN: AVCS-MC, APO 96491  
 Commanding General, USARV, ATTN: AV:DO, APO 96375  
 Commander-in-Chief, USARPAC, ATTN: GPOP-DT, APO 96588

TO: Assistant Chief of Staff for Force Development  
 Department of the Army  
 Washington, D.C. 20310

1. The significant activities and lessons learned have been reviewed and have been found to adequately summarize the unit's operations during this period.
2. Reference Lesson Learned 'Placement of Metal Matting on Airfields, ' p 20, paragraph c2. Concur. While reversing the direction of the matting may cause some crushing of the side connectors, that condition is deemed less destructive than tearing of the connectors with the matting placed in the existing attitude. Observation of airfields with matting direction reversed is recommended by higher levels of command to verify referenced lesson learned.

FOR THE COMMANDER:



S. C. WATERS  
 CPT, AGC  
 Adjutant

AVCC-FO (20 May 71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 31st Engineer Battalion  
(C)(A), Period Ending 30 April 1971, RCS CSFOR - 65 (R3)

HQ, US Army Engineer Command Vietnam, AFO 96491

1 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, AFO 90375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the units' operation during this period.
2. Reference item concerning "Centralization of 10 ton tractors and trailers", page 26, paragraph c(2). Concur with the recommendation for this particular unit in its current situation. No action by USARPAC or DA is recommended.
3. Reference item concerning "Placement of M8A1 matting on airfields", page 26, paragraph c(2). The problem of bent side connectors does not appear serious to continued use of the M8A1 matting. TM 5-337 does not indicate that the matting can be laid either way; hence, it is recommended that the 31st Engr Bn reverse the laying procedure and observe the results. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

*Charles M. Peterson*

CHARLES M. PETERSON

1LT, CE

Act Asst Adjutant General

CF:

CO 159th Engr Gp

CO 31st Engr Bn

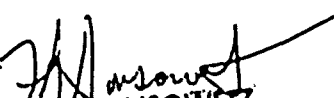
7  
AVHDO-DO (20 May 71) 3d Ind  
SUBJECT: Operational Report--Lessons Learned, 31st Engineer Battalion  
(C)(A) Period Ending 30 April 1971, RCS CSFOR - (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 25 JUN 1971

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-FD,  
APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 31st Engineer Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

  
F.L. HONSOWETZ  
CPT. AGC.  
Assistant Adjutant General

Cy furn:  
31st Engr Bn  
USAECV



GPOP-FD (20 May 71) 4th Ind (U)  
SUBJECT: Operational Report - Lessons Learned, 31st Engineer Battalion (C)  
(A) period ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 22 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*M. L. Mah*  
M. L. MAH  
2LT, AGC  
Asst AG

EG&amp;D-C

30 April 1971

SUBJECT: Operational Report - Lessons Learned: 854th Engineer Battalion (Construction) for the period ending 30 April 1971, RCS-CSFOR-65(R3)

## II. Lessons Learned:

### A. Personnel: None

### B. Operations:

#### 1. Operating equipment in dusty areas:

a. Observation: When operating under extremely dusty conditions, accident frequency increased due to poor visibility.

b. Evaluation: Accident rates must be reduced.

c. Recommendations: Decrease the travelling speed of all vehicles, to a safe level under those conditions, and utilize all water resources available to keep the road watered down. The water will serve as an effective dust-control measure.

d. Command Action: This has been done.

#### 2. Irrigation Ditches:

a. Observation: Irrigation ditches along the roadway, which must be covered for the purpose of widening the road, present a problem when the fill material is wet and when there is standing water in the ditches.

b. Evaluation: Ditches are difficult to fill properly, especially since the Vietnamese will not drain many of them, or allow us to do so. Therefore, sufficient soil stability is necessary prior to filling the ditch in.

c. Recommendation: Fill the existing ditches with sand and let set for several days, before continuing over the top with the subgrade operation.

d. Command Action: This has been done.

#### 4. Compaction of sub-base:

a. Observation: It has been found that in situations where laterite fill contains a high proportion of decomposed granite, the small vibratory compactors do not afford adequate compactive effort.

b. Evaluation: The smaller rollers, normally used on this type of operation, cannot provide the required bearing pressure necessary to crush the rock.

c. Recommendation: The heavy Hyster segmental compactor, a standard M&L/LOC item, serves the dual purpose of getting maximum compaction as well as crushing the larger aggregate chunks.

d. Command Action: This has been done.

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30 April 1971

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SUBJECT: Operational Report - Lessons Learned: 864th Engineer Battalion (Construction) for the period ending 30 April 1971, RCS-CSFOR-65(R3).

5. Benching Trenches and shoulder construction:

a. Observation: Much time was lost compacting shoulders adequately.

b. Evaluation: A sequence of construction was analyzed to determine the most efficient way of benching an existing road and constructing the shoulders.

c. Recommendation: It was found feasible to shape the benching trenches such that the road edge of the trench is slightly lower than the shoulder edge. Each lift down each side of the road is brought up at the same angle, so that when the subgrade is completed, both shoulders are slightly higher than the centerline. As sub-base is put down, the compactive effort is concentrated on the shoulders as the surface is gradually brought up to a "blue-top" convex shape. This method results in maximum shoulder compaction with a minimum of overall compactive effort.

d. Command Action: This is the method that is now used.

6. Pouring Concrete:

a. Observation: A 16-S mixer did not produce a sufficient amount of concrete necessary for a particular day's pour.

b. Evaluation: The output had to be increased.

c. Recommendation: This unit has had great success in placing large quantities of concrete in a single day. The average double-tube, low-profile culvert requires 80 cubic yards of concrete over the slab; a serious proposition for one day with a 16-S mixer. This amount is easily obtainable by the use of two mixers and an RT crane. The crane is spotted on one side of the culvert with one mixer, while the 2nd mixer is on the other side. A 2000 lb. concrete bucket is then filled at one mixer, placed in the form, swung to the other mixer, and the entire process is repeated. There is no lost time waiting for the batch to be mixed.

d. Command Action: This is now done when a large concrete pour is necessary.

7. Expedient Fork-lift:

a. Observation: When a forklift is not available to off-load pallets of cement, a crane may be substituted. However, off-loading with a crane can be very dangerous due to the fragile pallets. The strain added to the pallets by the crane cables can cause them to burst, damaging the bags as well as endangering personnel.

b. Evaluation: A better substitute for the fork-lift was desired.

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30 April 1971

SUBJECT: Operational Report - Lessons Learned: 864th Engineer Battalion (Construction) for the period ending 30 April 1971, RCS-CSFOR-65 (R3).

c. Recommendation: An AC bucket loader with two dozer cutting edges inserted in the clam of the bucket, makes a very acceptable expedient fork-lift.

d. Command Action: This is now done when a fork-lift is not available.

8. Reinforcement of asphalt paver:

a. Observation: Continued failures have occurred in the reinforcement of the hoppers of the Barber-Greene SA 35 paver due to the load in the hopper pushing.

b. Evaluation: Increased reinforcements are necessary.

c. Recommendation: The bars that hold-in the bottom of the side hopper should be reinforced, and bolted to the hopper instead of welded. This will definitely improve the performance of the paver.

d. Command Action: This has been done.

C. Intelligence: None

D. Logistics: During this reporting period on 1 Feb 1971, the 864th Engineer Battalion (Const) transferred its logistical support from Cam Ranh Bay Support Command to Saigon Support Command. The change was necessitated by the lack of construction supplies, self-service items, and repair parts at Cam Ranh Bay, as well as the lack of proper support furnished us by the units there. Upon transferring our support to Saigon Support Command, we continued to experience re-supply difficulties. In processing requisitions thru depot we ran into several problems with the computer, which in-turn, slowed down the release of critically needed items. This problem is still not fully resolved. Lack of items needed by this battalion to continue its LOC construction mission presented a problem. Specifically: 36", 48", 60", and 72" culvert, #6 rebar, 2"x4", 2"x6" lumber, 3/4" plywood, as well as many repair part components are among those items that were critically needed and not available. Substitutions were made when possible, and re-design changes were initiated to compensate for the lack of specified materials, however, this definitely caused a delay in our scheduled progress.

During this reporting period, we also experienced several problems with Class I ~~re-supply~~. Such items as ice, ice cream, fresh fruits and vegetables, chicken, and meats were not supplied according to the master menu.

Also during this period, the APO at Phan-Thiet provided very poor service to the ~~battalion~~. Its hours were sporadic and unscheduled, mail was not delivered to us as on the average of three or four days each week, and several letters and packages were lost and never recovered.

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30 April 1971

SUBJECT: Operational Report - Lessons Learned: 864th Engineer Battalion (Construction) for the period ending 30 April 1971, RCS-CSFOR-65(RJ).

E. Organization:

During this reporting period, the battalion strength fluctuated between 50% and 90%, with the majority of the time remaining nearer the lower figure. Losses continually outnumbered gains and thus presented a continuing declining strength problem. In an effort to compensate somewhat for this, all the 290M tractors and scrapers were moved under the control of Co C, thereby trying to consolidate individual efforts. All the water hauling capabilities, both potable and non-potable, went to Co A, and several internal changes were made within the companies to allow for the shortage of personnel.

F. Other: None

  
PHILLIP D. ENGLE  
LTC, CE  
Commanding

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BCEGA-C (30 April 1971) 1st Ind  
SUBJECT: Operational Report-Lessons Learned of the 864th Engineer  
Battalion (Construction); Period Ending 30 April 1971, RCS CSFOR-65 (R3).

DA, HEADQUARTERS, 35th Engineer Group (Construction) APO 96312, 4 June 1971

TO: Commanding General, United States Army Engineer Command, Vietnam  
ATTN: AVCC-MC apo 96491

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from the 864th Engineer Battalion (Construction) and concurs with the comments and observations of the Commander.

*Connelly Sanders Jr.*  
CONNELLY SANDERS JR.  
LTC, CE  
Acting Commander

AVCC-MO (30 Apr 71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 864th Engineer Battalion  
(Construction), period Ending 30 April 1971, RCS CSFOR-05 (R3)

FM US Army Engineer Command Vietnam, AFO 90491 14 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVNDO-DO, AFO 90375

The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

*Charles M. Peterson*

CHARLES M. PETERSON

1LT, CE

Act Asst Adjutant General

CF:

864th Engr Bn

35th Engr Gp

15.

AVHDO-DO (30 Apr 71) 3d Ind  
 SUBJECT: Operational Report - Lessons Learned: 864th Engineer Battalion  
 (Construction), for the period ending 30 April 1971, RCS CSFOR-65(R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 22 JUN 1971

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-FD,  
 APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 864th Engineer Battalion (Construction) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

*David E. Hunt*  
 D. L. HONSOWETZ  
 CPT. AGC.  
 Assistant Adjutant General

Cy furn:  
 864th Engr Bn  
 USAECV



GPOP-FD (30 Apr 71) 4th Ind (U)  
SUBJECT: Operational Report - Lessons Learned: 864th Engr Bn (Const)  
for period ending 30 Apr 71, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558

23 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*M. L. Mah*

M. L. MAH  
2LT, AGC  
Asst AG

EGFG-OP

14 May 1971

SUBJECT: Operational Report - Lessons Learned, 34th Engineer  
Battalion (Construction), Period Ending 30 April 1971,  
RCS CSFOR-65(R3)

Section 2, Lessons Learned: Commander's  
Observations, Evaluations, Recommendations and Command Actions

1. Personnel: None

2. Intelligence: None

3. Operations:

a. Wood Floor Construction

(1) Observation: Due to the unavailability of 3/4" Plywood, 1x6 material was substituted for flooring in tent frames and semi permanent buildings.

(2) Evaluation: The 1x6 material was not satisfactory, being too thin to provide a stable floor.

(3) Recommendation: If it is necessary to substitute 1x material for flooring, it will also be necessary to deviate from the standard plans and decrease floor joist spacing from 24" to 16".

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

b. Culvert Headwalls

(1) Observation: Headwalls for two 24" culverts were constructed using sand bags and the excavation was backfilled with compacted sand.

(2) Evaluation: Over a period of time the flow of water caused erosion and failure of the headwalls and dissolution of the backfill.

(3) Recommendation: Sand bag headwalls can be made acceptable if they are filled with a sand-cement mixture and the backfill is also sand-cement compacted in 4 to 6 inch lifts.

(4) The above recommendation was implemented by the appropriate elements of this command.

c. Pile Driving

(1) Observation: Pile alignment is one of the most difficult facets of driving pile.

(2) Evaluation: Pile alignment is highly desirable in light of future cap forming, placing, and superstructure operations.

(3) Recommendation: Construct a template when driving pile, maintaining a constant reference height, usually at the pile cut-off elevation. This is the best way to assure proper spacing and batter angle.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

d. Pile Driving

(1) Observation: When using a template to drive piles, it is necessary to increase the crane's headspace.

(2) Evaluation: This can be accomplished by excavating at the pile base or by filling an area for the crane to sit on.

(3) Recommendation: The best way to obtain additional headspace is by filling under the crane. Fill emplaced and compacted for this purpose can remain as part of the new construction.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

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14 May 1971

SUBJECT: Operational Report - Lessons Learned, 34th Engineer  
Battalion (Construction), Period Ending 30 April 1971,  
RCS GSFOR -65(R3)

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#### e. Shoulder Preparation

(1) Observation: Existing roadway shoulders sometimes appear well-compacted and stable, but actually contain a high degree of organic material.

(2) Evaluation: If these shoulders are exposed to continual rain, they will become soft and will ultimately fail.

(3) Recommendation: When widening an existing road or paving over existing shoulders, it is necessary to remove any existing organic material in the shoulders. A good way to accomplish this is with a modification for a grader blade. Extend about one half of the blade 4 to 6 inches down with a plate welded onto the existing blade. When the standard blade is lowered to the existing road surface, the extended blade will cut into the shoulder to a depth of 4 to 6 inches, thereby removing the necessary material. This can then be replaced with clean, compacted material.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

#### f. Shoulder Stabilization and Compaction

(1) Observation: Improperly compacted fill on shoulders and widened areas tends to become flaky and forms an unsatisfactory base for paving, even when shot with a bituminous treatment.

(2) Evaluation: At least 95% maximum density must be achieved by compactive effort.

(3) Recommendation: The most effective piece of equipment for maximum compactive effort has been the TOE 8-10 ton roller.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

#### g. Skim Paving

(1) Observation: When paving an existing road or over existing stable shoulders, sometimes the only preparation work involved is the filling of potholes and correcting an excessive slope.

(2) Evaluation: In this situation, the fastest method to accomplish both these things should be employed.

(3) Recommendation: Skim paving, accomplished by lowering the paver screed to 3/4" above the existing crown and adjusting the screed to proper road profile, is a fast method of patching potholes in the existing road and giving a correctly shaped base for final paving.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

#### h. Soil Binder Application

(1) Observation: MC-70 could not be obtained for application.

(2) Evaluation: Without a soil binder, road preparation would cease.

(3) Recommendation: A 50-50 mix of RC-800 and diesel was substituted for MC-70. It worked quite well and allowed operations to continue.

(4) Command Action: The above recommendation was implemented by the appropriate elements of this command.

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14 May 1971

SUBJECT: Operational Report - Lessons Learned, 34th Engineer  
Battalion (Construction), Period Ending 30 April 1971,  
RCS CSFOR - 65(R3)

#### 4. Organization:

##### a. Mission-oriented Organization

(1) Observation: The TOE organization of an Engineer Construction Battalion is a guideline which allows all units to perform all tasks with reasonable success.

(2) Evaluation: For specific, long term missions, it may be more efficient to vary from the TOE organization.

(3) Recommendation: This Battalion was reorganized to perform a specific mission, i.e., restoration of roads and bridges in the theater of operations. 'A' Company remained as equipment and maintenance support company, with the added responsibility of all battalion dump trucks. 'B' Company became the operators of the industrial site, including materials offload, asphalt plant, and paving train. 'C' Company is the vertical construction company, with responsibility for all culverts, bridges, and base construction. 'D' Company is the horizontal construction company responsible for all base preparation, shoulders and widening. Entire platoons were shifted within the battalion to accomplish this mission organization.

(4) Command Action: As stated in (3)

#### 5. Training: None

#### 6. Logistics:

##### a. Materials Handling

(1) Observation: Palletized barrels in barge shipment are difficult to offload.

(2) Evaluation: When the method of shipment cannot be selected it will sometimes be necessary to offload palletized material as rapidly as possible.

(3) Recommendation: Palletized barrels, with no lip around the top, were loaded 4 to a pallet and stacked in the hold of a barge. The barrels themselves were too thin to allow the use of a choker cable. A fork-like attachment was made to slip under the pallets and tighten automatically when lifted. This was found to be the most efficient method of pallet offload.

(4) Command Actions: As Stated in (3)

#### 7. Communications

##### a. Use of AN/GRC-163

(1) Observation: This battalion has used the AN/GRC-163 radio terminal set extensively.

(2) Evaluation: This set can easily overheat, as it is keyed continuously.

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14 May 1971

SUBJECT: Operational Report - Lessons Learned, 34th Engineer  
Battalion (Construction), Period Ending 30 April 1971,  
RCS CSFOR-65(R3)

(3) Recommendation: The terminal set should be operated only in an air conditioned place. A fan should be placed directly above the RT-524 unit blowing directly down. A slightly damp towel can be placed on top of the RT-524.

(4) Command Action: The above recommendation was implemented by the Battalion Communications section as SOP.

8. Materiel: None

9. Other: None

1 Incl

~~Battalion Construction~~  
Incl 1 withdrawn, HQ, DA

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2-CINCUSARPAC, ATTN: GPOF-DT

3-CG, USARV, ATTN: AVHDO-DO

3-CG, USAECV, ATTN: AVCC-MO

3-CO, 34th Engr Gp, ATTN: EGF-OP

*Francis A. Sarnowski*  
FRANCIS A. SARNOWSKI  
LTC, CE  
Commanding

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2. CSF-SF (14 May 1971) 1st Ind

SUBJECT: Operational Report - Lessons Learned of 34th Engineer Battalion  
(Const) for period ending 30 April 1971, RCS CSFGR-65 (R3)

DA, HEAD QUARTERS, 34TH ENGINEER GROUP (CONST) APC SF 96215 28 May 1971

TO: Commanding General, United States Army Engineer Command, Vietnam,  
ATTN: AVCC-1C, APC SF 96491

This Headquarters has reviewed the Operational Report - Lessons Learned for the semi-annual period ending 30 April 1971 from the 34th Engineer Battalion. Do not concur with reference item concerning "Soil Binder Application", page 9, para 3h. This Headquarters does not recommend the use of RC-800 in any form as a prime cost. Unit will be notified of such. No action by USAHPAC or DA is recommended.

FOR THE COMMANDER:

*NO Sukoviak*  
N. G. SUKOVIAK  
CPT, AGC  
Adjutant

Copies Furnished:  
1 - CC, 34th EB

AVOC-RO (14 May 71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 34th Engineer Battalion  
(Construction), Period Ending 30 April 1971, ACO CEROC-05(RJ)

FM US Army Engineer Command Vietnam, ARD 90491 9 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDC-DO, ARD 90375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.
2. Reference item concerning "skim paving", para. 9, paragraph 3. Concur with recommendation and command action taken. Skim paving is an effective and expedient method for reducing crown and sealing stabilized shoulders; however, permanent repair of all minor failures including potholes should be made prior to overlaying to insure quality construction. No action by USARAC or DA recommended.

FOR THE COMMANDER:

*Charles M. Peterson*

CHARLES M. PETERSON  
1LT, CE  
Act Asst Adjutant General

Cr:  
34th Engr Bn  
34th Engr Gp

23

AVHDO-DO (14 May 71) 3d Ind  
 SUBJECT: Operational Report - Lessons Learned, 34th Engineer  
 Battalion (Construction), Period Ending 30 April 1971,  
 RCS CSFOR - 65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 2 : - 1 7/1

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-FD,  
 APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 34th Engineer Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

*David E. Honsowetz*  
 F. L. HONSOWETZ  
 CPT. AGC. General

Cy furn:  
 34th Engr Bn  
 USAECV



GPOP-FD (14 May 71) 4th Ind (U)  
SUBJECT: Operational Report - Lessons Learned, 34th Engr Bn (Const),  
period ending 30 Apr 71, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 23 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*M. L. Mah*

M. L. MAH  
2LT, AGC  
Asst AG

25

EGBE-OP

SUBJECT: Operational Report - - Lessons Learned, 169th Engineer Battalion (construction), period ending 30 April 1971, RCS CSFOR - 65 (R3)

## SECTION II, LESSONS LEARNED

1. PERSONNEL: None
2. INTELLIGENCE: None
3. OPERATIONS:
  - a. Headwall Construction:

(1) Observation: The subbase material in the area of the 108" culvert is grayish-blue in color, generally inorganic, is stiff when dry, but is very weak in the saturated condition. The bearing pressure of the headwall, wingwall and apron would be much greater than the "Blue Clay" could support.

(2) Evaluation: The proposed headwall, wingwall, and apron of the 108" MPPA culvert weighed approximately 130 tons, and exerted a bearing pressure of 0.45 ton/sq ft. It was necessary to distribute this load over a large area of the subbase to prevent a bearing failure.

(3) Recommendation: Steel piles should have been used; however, the situation warranted attempting another method. The rock and clay matrix used provided a solution capable of withstanding the high bearing pressure.

DAFD-OTT  
711099  
Incl. 4

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LGRE-OP

SUBJECT: Operational Report - - Lessons Learned, 169th Engineer Battalion (construction), period ending 30 April 1971, RCS CSFOR - 65 (R3)

(4) Command Action: The clay was excavated to an average depth of 7 feet below the headwall. The area was then pumped out and filled with blast rock, 6'-3" in diameter. The rock and clay matrix that resulted was tamped with a 2000 pound "headache ball" to interlock the rock and provide as level a bearing surface as possible. The vertical reinforcing steel was then placed and a concrete leveling course was poured to further bind the rock bearing pad and provide a level base on which to form the apron.

b. Dust Suppression on Bypasses:

(1) Observation: Over 75 KM of road under construction constituted numerous bypass roads to be constructed. Heavy traffic loads from civilian and military vehicles created a serious dust problem.

(2) Evaluation: Continuous grading of bypass roads was very impractical. After several days of grading ditches became filled with powdery dust while the roadway remained unchanged.

(3) Recommendations: A dust palliative applied directly to the road without pre-blading will after several applications build a crust of from 1/2" to 1" thick.

(4) Command Action: A 600 gallon Navy cube was fitted with a valve and gravity fed spray bar. A commercial dust palliative was used along with MC-70 cutback with diesel. Rather than blade the dust off the road the solution was applied directly to the dust. Traffic worked the dust and palliative into a hard crust which required little further maintenance.

c. Retention of Fines From Stockpile to Laydown Site:

(1) Observation: Two inch base rock being hauled from the quarry to the rock lay-down site on the road was found to have a minimum number of fines.

(2) Evaluation: It is necessary to keep fines mixed with the larger 2" rock prior to placing on roadway or the base course must be choked before final compaction.

(3) Recommendation: Water should be added to the initial stockpile before handling to prevent loss of fines.

(4) Command Action: At each stockpile on the road a 5000 gal water tanker applied water to each load of rock as it was dumped. Water was again applied when the trucks were loaded for rock to be placed on the road. A Jersey Spreader was found to be an excellent piece of equipment as an aid to retaining fines, in that it confined each load of rock and did away with continuous grader blading.

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LGBL-OP

SUBJECT: Operational Report - - Lessons Learned, 169th Engineer Battalion (construction), period ending 30 April 1971, RCS CSFOR - 65 (R3)

d. Repair Parts:

(1) Observation: During this period the 43rd Engineer Company (DT) received 71 each 18 cy, 20 ton commercial dump trucks manufactured by International Harvester to replace a like number of GMC dumps. Repair parts were not received concurrent or prior to receipt of the trucks.

(2) Evaluation: Certain repair parts were not available when trucks first became deadlined, this led to extended NORS deadlines for very common items such as body parts, radiators, and fuel filters.

(3) Recommendation: To alleviate this type of problem it is suggested that future purchase of MCM/LOC equipment to include in initial specifications the following:

(a) Driving diesel engines be allowed to ease overhaul.

(b) Repair parts experience from units using comparable machines be used as a basis for initial stockages. These initial stockages should be shipped with the machine to insure availability on site.

(c) Any special tools or machines required for repair of components be identified at time of contract and if not available in the theater where machines are to be used, be provided and shipped concurrent with repair parts.

(4) Command Action: A small amount of repair parts were obtained by borrowing needed items from other units and by initiating a system of controlled substitution whereby necessary parts were obtained for a short period of time. Also this headquarters immediately notified higher commands of this problem in an attempt to purchase the parts from commercial sources.

4. ORGANIZATION: None


5. TRAINING: None

6. LOGISTICS: None

7. COMMUNICATIONS: None

8. MATERIAL: None

9. OTHER: None

  
JERRY E. SMITH  
LTC CE  
Commanding

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29  
 21-OF (20 May 71) 1st Ind  
 SUBJECT: Operational Report--Lessons Learned, 169th Engineer Battalion  
 (Construction), Period Ending 30 April 1971, RCS CSFOR-65(R3)

FM, HQ, 159th Engineer Group, APO 96491

29 May 1971

THRU Commanding General, USAECV, ATTN: AVCC-MC, APO 96491  
 Commanding General, USARV, ATTN: AVHDC, APO 96375  
 Commander-in-Chief, USARPAC, ATTN: GPOP-DT, APO 96588

TO: Assistant Chief of Staff for Force Development  
 Department of the Army  
 Washington, D.C. 20310

1. The significant activities and lessons learned have been reviewed and are an adequate description of the unit's operations during this period.

2. Reference Lesson Learned "Retention of Fines from Stockpile to Laydown Site, p 15, paragraph 3c. Concur. Lack of fines was an acute problem during the dry season, and double handling between stockpile and final placement caused excessive loss of fines when material was dry. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:



S. C. WATERS  
 CPT, AGC  
 Adjutant

AVCC-140 (20 May 71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 169th Engineer Battalion,  
Period Ending 30 April 1971, RCS CSFOR - 65 (R3)

FM US Army Engineer Command Vietnam, APO 96491

1 JUN 71

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, APO 96375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.
2. Reference item concerning "Dust Suppression on Bypasses", page 15, paragraph 3b. Concur with the recommendation and command action taken. This procedure has been successful when used in similar situations by other construction units. No action by USARPAC or DA is recommended.
3. Reference item concerning "Retention of Fines from Stockpile to Laydown Site", page 15, paragraph 3c. Concur with the recommendation and action taken. An alternative and more practical solution to this problem would be the use of a tarpaulin which not only prevents the loss of fines from 2 inch base rock due to haul, but also prevents aggregate, especially asphalt aggregate, from becoming excessively wet during long hauls under rainy conditions. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

*Charles M. Peterson*

CHARLES M. PETERSON  
1LT, CE  
Act Asst Adjutant General

CF:

CO 169th Engr Bn  
CO 159th Engr Gp

31

AVHDO-DO (20 May 71) 3d Ind  
 SUBJECT: Operational Report - - Lessons Learned, 169th Engineer Battalion  
 (construction), period ending 30 April 1971, RCS CSFOR - 65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 22 JUL 1971

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-FD,  
 APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned  
 for the period ending 30 April 1971 from Headquarters, 169th Engineer  
 Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

Cy furn:  
 169th Engr Bn  
 USAECV

*David E. Hunt*  
 F. L. HONSOWETZ  
 CPT. AGC.  
 Assistant Adjutant General

GPOP-FD (20 May 71) 4th Ind (U)  
SUBJECT: Operational Report - Lessons Learned, 169th Engineer Battalion  
(Const), period ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 22 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*M. L. Mah*  
M. L. MAH  
2LT, AGC  
Asst AG



SUBJECT: Operational Report - Lessons Learned 339th Engineer Battalion  
(Const), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

2. Lessons Learned: Commander's Observations, Evaluations and Recommendations:

a. Personnel - Personnel Reassignments:

(1) Observation: Personnel turn over within this Battalion currently averages 40% per quarter for the last year.

(2) Evaluation: The rapid turn over of personnel is the result of the normal PCS and ETS of individuals within the Battalion. The rapid loss of personnel and the replacement of these personnel with personnel not MOS qualified has caused a cross training program to be continuously in progress to fully qualify new personnel and to alleviate MOS shortages. Overcoming this condition is the most serious problem presented to this Battalion.

(3) Recommendation: That all possible action be taken to alleviate the personnel turbulence that now exists within the Battalion.

b. Operations:

(1) Paving without Prime Coat:

(a) Observation: During the winter in the Northwest, the weather is cold and rainy. Normal asphalt paving procedures call for a prime coat of an asphalt cutback prior to paving. The volatiles in the prime coat must evaporate prior to paving. In the cold weather the volatiles evaporate slowly and it takes from a few days to more than a week to cure. During the time that the prime coat is curing, it invariably rains and washes the remainder off the surface before it penetrates.

(b) Evaluation: To eliminate delays in asphalt paving caused

by uncured prime coat, it was decided to eliminate the prime coat and pave over the leveling course. It was found that good adhesion of the asphalt to the base was obtained and the delay was avoided.

(c) Recommendation: That this procedure continue to be used when weather conditions dictate.

## (2) Use of Rock Crusher waste:

(a) Observation: The soil in the vicinity of Fort Lewis is glacial till with rocks greater than two inches in diameter comprising only 30% of the soil. This natural material is good for the subgrade in horizontal construction but has too much large rock to be used as a base course. The usual practice, following government specifications, is to use this material as the subgrade and then place a 4 inch leveling course of crushed rock upon which to pave.

(b) Evaluation: The primary rock crusher scalps off all the natural material less than two inches in diameter. When this material is placed over the subgrade it smooths the protrusions made by the six inch rocks and only requires two inches of crushed leveling course. This saves two inches of crushed rock over the entire surface to be paved and uses the waste material from the rock crusher which would otherwise be discarded.

(c) Recommendation: That this method of preparation for paving be continued.

## (3) Replacing Old Electrical Wiring:

(a) Observation: When rehabilitating old temporary wooden buildings it has been found that all the existing wiring has either decomposed or does not meet existing building codes.

(b) Evaluation: When working in these buildings all the existing wiring should be replaced with new wiring and no plans should be made to reuse the existing wire.

(c) Recommendation: When planning rehabilitation of these old buildings, the plans should schedule replacement of all existing electrical wire.

## (4) Filed Expedient Warning Devices for 5 Ton Dump Trucks:

(a) Observation: Warning light sets for 5 ton dump trucks involved in sanding operations during inclement weather are not readily available and are hard to see anyway due to their location on the vehicle together with the fact that the exhaust from the engines quickly deposits so much soot on the lenses that the light cannot shine through.

(b) Evaluation: A better warning system for the rear of the vehicles is necessary because the vehicles move so slowly that other vehicles approaching from the rear cannot otherwise see the trucks to the extent

35 that they can properly judge the distance to them and the truck's speed until they are so close that a collision is likely on slippery pavement.

(c) Recommendation: That aerial liason panel markers, 6' x 2', luminescent orange slide out, be attached to the tailgates of the 5 ton dump trucks as a field expedient warning device. With these markers so mounted it would be virtually impossible to avoid seeing the truck even on the darkest of roads since the slightest bit of light hitting the panel is reflected back very brightly and the stop lights of the truck reflecting off the back side of the markers cast a bright pink halo around the edge of the orange surface.

(d) Action Taken: This type of panel marker has been used on all Company A dump trucks involved in sanding operations this year with notable success.

c. Intelligence: None

d. Organization: MTO&E for the 22nd Engineer Company (CS)

(1) Observation: On 1 April 1971 the 22nd Engineer Company (Construction Support) was assigned a MTO&E authorizing the unit a troop strength of 127 officers and E1. Under the unit's previous TO&E authorized troop strength was 162, a reduction of 35 personnel.

(2) Evaluation: Because of the troop reduction, the unit is experiencing extreme difficulty in performing their TO&E mission while performing the extensive maintenance required to keep their equipment in an operational condition.

(3) Recommendation: That authorized troop strength be raised by MTO&E.

(4) The necessary correspondence will be forwarded requesting a re-evaluation of the MTO&E.

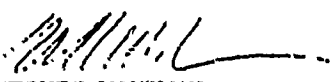
e. Training: None

f. Logistics: None

g. Communications: None

h. Material: None

i. Other: None

  
ELVIN WOHLMAN  
LTC, CE  
Commanding

37

AMNLE-SB-GBC (20 May '71) 1st Ind  
 SUBJECT: Operational Report - Lessons Learned (339th Engineer Battalion  
 (Construction) Period Ending 31 January 1971) RCS CSFOR-65 (R2)

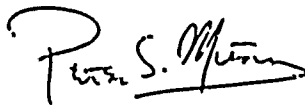
DA, Headquarters, 15th Support Brigade, Fort Lewis, WA 98433 1 JUN 1971

THRU: Commanding General, HQ, USAF & Ft Lewis, ATTN: AMNLE-DFT,  
 Fort Lewis, WA 98433  
 Commanding General, Sixth United States Army, ATTN: AMOPS-MGT,  
 Presidio of San Francisco, CAL 94129  
 Commanding General, Continental Army Command, Fort Monroe, VA 23361

TO: Assistant Chief of Staff for Force Development, Department of the  
 Army, Washington, DC 20310

Subject has been reviewed and is found to be objective and factual.

FOR THE COMMANDER:



PETER S. MUNOZ  
 2LT, AGC  
 Asst AG

AMNLE-GCT-T (20 May 71) 2d Ind

SUBJECT: Operational Report - Lessons Learned (339th Engr Bn (C) Period  
Ending 30 April 1971), RCS CSFOR-65 (R3)

HQ, USATC, Inf and Ft Lewis, Fort Lewis, WA 98433

8 JUN 1971

THRU: Commanding General, Sixth United States Army, ATTN: AMOPS-MGT,  
Presidio of San Francisco, CA 94129  
Commanding General, United States Continental Army Command,  
Fort Monroe, VA 23351

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

Operational report has been reviewed and found objective and factual.

FOR THE COMMANDER:

*D. W. Martineau*  
for D. W. MARTINEAU  
1LT, AGC  
Asst Adjutant General

AMOPS-T1 (20 May 71) 3d Ind Mr. Morrow/emr/586-3101  
SUBJECT: Operational Report - Lessons Learned (339th Engr Bn (C) Period  
Ending 30 April 1971), RCS CSFOR-65 (R3)

HQ SIXTH US ARMY, Presidio of San Francisco, California 94129 14 JUN 1971


TO: Commanding General, United States Continental Army Command, ATTN:  
ATOPS-MGT, Monroe, VA 23351

Subject report has been evaluated and is found to be objective, factual and correct. The following exceptions are made with respect to the recommendations:

a. Paragraph 2b(1), Paving Without Prime Coat. Rather than eliminating the prime coat during wet weather, it is recommended that the scheduling of paving operations avoid wet weather as much as possible. The "good adhesion of the asphalt to the base" is questioned as there is nothing to bond to.

b. Paragraph 2b(2), Use of Rock Crusher Waste. The recommended use of rock crusher waste is acceptable but the 4 inch leveling course adds strength as well as smoothness to the base. Insure that the design parameters of the pavement are maintained if this reduction in the leveling course is made.

FOR THE COMMANDER:

  
C. C. MATTHEWS  
Major, AGC  
Asst AG

CF:  
CG USATC INF and  
Ft Lewis wo incl

ATOPS-MGT(20 May 71) 4th Ind

SUBJECT: Operational Report - Lessons Learned, (339th Engineer Battalion (C)  
Period Ending 30 April 1971), RCS CSFOR-65 (R3)

Headquarters, United States Continental Army Command, Fort Monroe, Virginia  
23351 14 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the Army,  
Washington, D. C. 20310

The basic report has been reviewed and is approved as indorsed.

FOR THE COMMANDER:

Cy furn:  
CG, Sixth USA

*7m Fritz, Lt, ABC*  
RAY D. ADLERFINGER  
MAJ, AGC  
Asst AG

EGD-3

30 April 1971

SUBJECT: Operational Report - Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

SECTION II - LESSONS LEARNED: COMMANDER'S OBSERVATIONS, EVALUATIONS AND  
RECOMMENDATIONS.

1. Personnel: None
2. Intelligence: None

DAFD-OTT  
711122  
Incl. 6

71



EGD-3

30 April 1971

SUBJECT: Operational Report - Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

### 3. Operations:

#### a. Test Samples from Borrow Areas:

(1) Observation: Soils samples from borrow areas have been coming into the soils lab for testing after the constructing unit has started placing the material.

(2) Evaluation: Soils samples are to be sent to the soils lab prior to use as a fill material so tests can be made to determine the quality of the sample. Combat Engineer battalions do not have the personnel or equipment to perform these tests.

(3) Recommendation: Soils analysts should travel to the job sites at least every other week and make on the spot checks on compaction density obtained on roads and perform tests in planned borrow areas.

(4) Command Action: The recommended action has been successfully incorporated into this unit's quality control program.

#### b. Testing for Moisture Content:

(1) Observation: Construction supervisors in Combat Battalions have no means to make daily tests on the moisture content of the soil.

(2) Evaluation: Since only Group Headquarters has testing equipment to support the combat battalions, soils analysts travel to each battalion making tests. This procedure is effective but does not enable the construction supervisor to check moisture content many times on a daily basis.

(3) Recommendation: It is recommended that soils technicians prepare three samples of the soil, with one sample containing too much moisture, one at optimum moisture content and one which does not contain enough moisture. The construction supervisor can feel these samples and learn to test the moisture content by this method.

(4) Command Action: Soils analysts are instructing construction supervisors as they make their weekly spot checks on roads throughout the Group LO.

4. Organization: None

5. Training: None

6. Logistics:

a. Cancellation of Construction Material Requisitions:

EGD-3

30 April 1971

SUBJECT: Operational Report - Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(1) Observation: On 23 March 1971, the S-4 of the 27th Engineer Battalion visited the Group S-4 with a list of requisitions for construction material that had been cancelled.

(2) Evaluation: The status given was "CA", which means "Cancelled: reason for cancellation will follow in separate correspondence". Group S-4, and the 27th Engr Bn S-4 visited Stock Control at US Army Depot to try and determine the reason for the cancellation. The stock control officer stated that he could not understand why the requisitions were cancelled as long as they were submitted as "Exception Data" requisitions. It was discovered that the requisitions had been submitted with a Document Identifier Code of "AOA" rather than "AOE". The difference in the DIC determines whether the requisition will be put through the computer on a normal machine run or be given to the commodity manager for hand processing. An AOA requisition will go into the computer and an AOE requisition will be hand processed. This has special significance when requisitioning construction materials, for many, including most of the items which had been cancelled, are command controlled allocated items. The AOA requisition, once it gets to depot, is treated as a requisition from the DSU to the depot; when it goes into the computer, the quantity field is checked against the allocation for the DSU, and if it is above the allocation, is cancelled.

(3) Recommendation: Although issues to engineer units under valid Construction Directives are not subject to the allocations, requisitions for allocated items must be submitted as AOE requisitions, so they will be hand processed by the commodity manager and not put into a machine run.

(4) Command Action: All battalions in this command have been informed that all materials ordered under a Construction Directive number must be ordered with a DIC of "AOE". It is hoped that this will prevent any cancellation of construction material requisitions under CD's in the future.

#### b. Standardization of Requisition Procedures:

(1) Observation: It has been the experience of the 45th Engineer Group S-4 section that many cancellations of requisitions by units of this group have been because of errors in completion of the requisition format on DA Form 2765-1. Other cancellations have been due to incorrect or incomplete information included on requisitions for ICCV controlled items.

(2) Evaluation: This has led to difficulties in all our units in receiving requisitioned items or valid back orders from ICCV and US Army Depot, Da Nang.

(3) Recommendation and Command Action: During a recent logistics

EGD-3

30 April 1971

SUBJECT: Operational Report -Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

conference for the S-4 and Maintenance Sections of units of the 45th Group, a helpful aid was made available to all personnel to try and alleviate this problem. This consisted of a pamphlet containing instructions and information on all aspects of requisitioning supplies, as applied in Vietnam. Also included were example DA Forms 2765-1 which indicated what information to fill in where for various categories of requisitions, such as ICCV controlled items, command controlled items and normal requisitions for expendables. All supply personnel were instructed to follow this pamphlet for requisitioning procedures and it is hoped that this will avoid cancellations for the previously mentioned reasons in the future. The pamphlet is included as Inclosure 7.

7. Communications: None

8. Material:

a. OH-58A Rotor Blade Wear:

(1) Observation: Excessive erosion of main rotor blades on OH-58A helicopters is occurring.

(2) Evaluation: Due to the sandy and dusty operating conditions in our particular mission employment and the presence of a salt laden air environment, extra precautions and inspections of the main rotor blades need to be performed.

(3) Recommendation: Pilots and crew chiefs should pay particularly close attention to the main rotor blades during the pre-flight and daily inspections to check for the start of erosion. Maintenance personnel must make a positive effort to insure that the blades are being waxed and maintained as much as necessary for the operational environment.

b. Contamination of Tail Rotor Gear Box:

(1) Observation: During the rainy season the 90° tail rotor gear box becomes contaminated with water.

(2) Evaluation: Preventive measures by maintenance personnel should be taken to keep this from happening, such as checking the rubber gasket to make sure it is in serviceable condition.

(3) Recommendation: A new and perhaps better cap should be introduced into the supply system.

(4) Command Action: An EIR (Equipment Improvement Recommendation) has been sent to the Aviation Maintenance Point for evaluation.

c. Repair Parts for OH-58A Aircraft:

EGD-3

30 April 1971

SUBJECT: Operational Report - Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(1) Observation: Maintenance Supply is still a slow process for OH-58A aircraft.

(2) Evaluation: The relatively new addition of the OH-58 to the inventory in the Republic of Vietnam has left a supply system shortage of critical parts.

(3) Recommendation: The unit supply officer should insure that his PLL is being maintained at authorized level and that an accurate record of demands is kept on parts not authorized stockage so that they may be introduced into the PLL when the requirements are met. It is also recommended that the unit maintenance personnel inform the supply personnel of time change parts prior to actual need so that RDD orders can be made to avoid extended supply down time on the aircraft.

d. Track Adjustment on D7E Tractors:

(1) Observation: Units reported difficulty in maintaining proper track adjustment on D7E tractors.

(2) Evaluation: Failure was discovered in that the check valve was being improperly tooled so that the check valve would not properly seat, allowing seepage.

(3) Recommendation:

(a) A wooden dowel pointed sufficiently to center on and polish the brass check ball seat should be used to clean the seat.

(b) If the above does not stop the back pressure leak, a new drill bit, .0003 to .0005 smaller than ball diameter can be used to re-shape the seat area, drilling dead center for one-sixteenth inch.

(c) Whenever (b) is used, an EIR should be submitted.

FOR THE COMMANDER

*Ernest C Heimberg*  
ERNEST C HEIMBERG  
CPT, CE  
Asst Adjutant

DISTRIBUTION:

2 - CMC, USARPAC, ATTN: GROP-DT  
3 - CG, USARV, ATTN: AVHDO-DO  
3 - CG, USAECV, ATTN: AVCC-MO  
1 - CO, 14th Engr Bn

1 - CO, 27th Engr Bn  
1 - CO, 39th Engr Bn  
1 - CO, 84th Engr Bn

117 AVCC-NO (30 Apr 71) 1st Ind  
 SUBJECT: Operational Report-Lessons Learned, 45th Engineer Group  
 (Construction) Period Ending 30 Apr 1975, RCS CSFOR-65 (R3)

HEADQUARTERS US ARMY ENGINEER COMMAND, VIETNAM AFO 90491 30 MAY 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, AFO 90375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.
2. Reference item concerning "Test samples from borrow area," page 24, paragraph 3(a). Concur. Soils analysts or trained personnel should make daily compaction tests on roads under construction and evaluate borrow areas prior to their use. (Ref. USAECV Reg. 415-o) Personnel from the combat engineer units receive soil analyst training from USAECV upon request. Testing equipment can be fabricated or field expedient methods used. (Ref. "Materials Testing" TM 5-530) Equipment may also be procured through USAECV upon request. No action by USARVAC or DA is recommended.
3. Reference item concerning "Testing for moisture content," page 24, paragraph 3(b). Concur. Moisture contents should be determined daily, but rough approximations can be made by an individual who becomes familiar with the soil conditions. Training and equipment required should be requested as needed from USAECV. No action by USARVAC or DA is recommended.
4. Referenced item concerning "Track Adjustment on D7E Tractors", page 27, paragraph 8d. Nonconcur with evaluation. This Headquarters in coordination with KECOM attributes minute dirt and grit as the cause of improper seating of check valve, allowing seepage. Concur with recommendation (3) (a) as a method to clean valve seat. Nonconcur with recommendations (3) (b), (c). Efforts to eliminate seepage should be limited to cleaning of the valve seat. Reshaping of the seat area should not be necessary. No action by USARVAC or DA is recommended.

FOR THE COMMANDER:

*Charles M. Peterson*

CHARLES M. PETERSON  
 1LT, CE  
 Asst Adjutant General

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A.HDO-DO (30 Apr 71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 45th Engineer Group  
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 18 JUN 1971.

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-FD,  
APO 96558

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 45th Engineer Group (Construction) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

Cy furn:  
45th Engr Gp  
USAECV

*Daniel E. Hunt 1st Lt, AGC*  
F. L. HONSOWETZ  
CPT. AGC.  
Assistant Adjutant General

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GPOP-FD (30 Apr 71) 3d Ind

SUBJECT: Operational Report - Lessons Learned, 45th Engr Gp (Const),  
period ending 30 Apr 71, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558

23 JUL 1971

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*M. L. Mah*

M. L. MAH  
2LT, ASC  
Asst AG

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